EFFECT OF SUPPORT ON THE ACTIVITY OF MoVCeZr CATALYST FOR PROPANE AMMoxidATION REACTION
Anita Ramli\textsuperscript{1}, Farinaa Md Jamil\textsuperscript{1,2} and Ishak Ahmad\textsuperscript{2}.
\textsuperscript{1}Advanced Materials Research Centre (AMREC), SIRIM Berhad, Lot 34, Jalan Hi-Tech 2/3, Kulim Hi-Tech Park, 09000 Kulim, Kedah, Malaysia.
\textsuperscript{2}School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia.

ABSTRACT
Mixed metal oxide catalysts based on Mo-V have been known as the most active and selective in the ammonoxidation of propane to ACN. A series of MoVCeZr (5% wt/wt) supported with MOR, TiO\textsubscript{2} and MgO have been prepared by incipient wetness impregnation method for propane ammonoxidation reaction to ACN. The catalyst was calcined in a two steps calcination process in static air between 350-600 °C for a total of 10h. The surface area and pore size of these catalysts were measured using physical adsorption of nitrogen following Brunauer, Emmet and Teller (BET) equation. The textural and morphological of these catalysts were determined using scanning electron microscopy (SEM) and X-ray Diffraction (XRD). The activities of all catalysts were tested using a fixed-bed reactor with online gas chromatography (GC) at 420 °C and atmospheric pressure in the presence of 0.5 ml catalyst with composition consisting of 5.8 : 7 : 17.4 (propane : ammonia : air) and helium as carrier to give a total flow of 120 ml. Results show that MoVCeZr supported with MOR, TiO2 and MgO give a better conversion due to the surface area and pore size characteristic of catalyst.

REFERENCES